



NAVY DEPARTMENT

BUMED NEWS LETTER

a digest of timely information

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(Not Restricted)

Some Medical Uses of Atomic Energy: Many decades ago it was discovered that radium and other radioactive substances could be used in the treatment of malignant growths. The energy which is used to destroy the cancerous tissue is strictly atomic energy released by the slow conversion of a small fraction of the nuclear mass into kinetic energy of the disintegration radiations.

As far back as 1913 Georg von Hevesy and Fritz Paneth found that the chemical properties of the radioactive substance radium-D were identical with those of lead. Moreover, when a small amount of radium-D was mixed with a sample of lead, it was impossible by any chemical means to separate the two. Historically, this was one of the earliest proofs of the existence of isotopes, for radium-D is simply a beta-ray-emitting heavy isotope of lead. It occurred to these workers that a small amount of radium-D could be added to lead, and that subsequently the highly sensitive radioactive determination of radium-D could be used as a quantitative measure of the amount of lead sample present even after elaborate chemical or biological reactions had taken place. They performed then the first deliberately planned experiment using a radioactive "tracer," and subsequently they and their students used the method of radioactive tracers in studies of the biochemistry of lead, the mechanism of chemical reactions, the properties of colloids, surface adsorption and many other matters.

For the past 12 years nuclear physicists have been able to provide sources for the slow release of usable amounts of atomic energy by transmuting stable atoms of the ordinary chemical elements into artificially radioactive forms of the same or different elements.

Once produced, each of the man-made radioactive isotopes--like those that occur in nature--disintegrates with a rapidity which is determined solely by its own internal constitution. This rapidity of disintegration is not altered by any chemical or physical processes to which the isotope may later be subjected. Some radioactive isotopes have extremely long lifetimes, requiring a span of a thousand years for the disintegration of half of the atoms produced. Others have "half periods" of a few years or days or hours. Still others have half periods of only a few seconds, and are of interest only to physicists, because their half periods are too short to permit them to be used in protracted tracer experiments. However, most chemical elements have at least one radioactive isotope with a reasonably long half period.

In the method of radioactive tracers a new analytical tool of unparalleled sensitivity became available to medical science. The method is to be classed with other analytical technics now widely used by workers in all fields, but

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which came originally as by-products of fundamental research in physics. These have included such well-known devices as the analytical balance, the microscope, the X-ray, the spectograph, the electron microscope, and others.

As soon as radioactive isotopes of elements having physiological importance, such as carbon, phosphorus, sulfur, iron, iodine, and others became available, biologists and physicists, appreciating the potentialities for important research made possible thereby, quickly undertook putting these radioactive isotopes to work as tracers in studies on the physiology and pathology of plants and animals. The great merit in the use of radioactive tracers is that there is provided thereby a way of literally marking a few atoms and of following these atoms as they proceed through even the most complicated metabolic processes in either diseased or normal organisms. It has thus become possible to distinguish between, for example, atoms of phosphorus in the enamel of a rat's incisors, which have been there for months, and atoms of phosphorus which the animal drank in its milk at a particular meal very recently.

Radioactive isotopes of iron built into donor red cells greatly facilitated the experimental studies in the development of a superior preservative for stored blood. This accomplishment made possible the successful Whole Blood Distribution Program of the War in the Pacific.

Vitamin B₁ has been synthesized using radioactive sulfur, and studies of its storage, utilization and excretion have shown that 10 per cent of the vitamin B₁ in the human body is destroyed every twenty-four hours. Such information, besides forming a basis for optimal clinical use of therapeutic agents, points out avenues of approach to other problems needing solution.

Preliminary studies on phases of carbohydrate metabolism using radioactive isotopes have been carried out. Sodium lactate in which particular carbon atoms had been tagged by using radioactive carbon atoms to synthesize the lactate was administered to a series of animals. Information on the details of the chemical reactions leading to the formation of liver glycogen was sought by radioactive analysis of the new glycogen appearing in the livers of the experimental animals. The situation was found to be more complicated than had been believed previously. It could be shown that a large proportion of the carbon atoms in the newly formed glycogen was actually from carbon dioxide being carried by the blood stream to the lungs for exhalation.

The metabolism of thyroxin has been studied in several laboratories over a period of years with the aid of radioactive iodine. The conversion of inorganic iodine into di-iodotyrosine in the thyroid gland and the subsequent formation of thyroxin from this chemical have been traced in quantitative detail in both normal and diseased thyroid glands.

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It was possible from the history alone in this group of cases to have been suspicious almost to the point of conviction of the presence of a possible cancer of the colon or rectum.

Because carcinoma does produce such early manifestations so consistently, an earlier investigation than is now always carried out should be made in any patient with any one of these three features. Moreover, a complete and thorough investigation of the colon by barium enema, contrast enema and sigmoidoscopic examination in any patient with blood in the stool not proved to be of hemorrhoidal origin, and with or without altered bowel function and abdominal pain and cramps will tend to eliminate the discovery later of a cancer in a far advanced stage.

If it were possible to see that every patient having one or more of these three manifestations in the history were submitted to the aforementioned investigations, the operability of cancer of the colon and rectum in these cases would be increased materially, the nonrecurrence rate would likewise be raised and the mortality rate would be even further lowered.

The author stresses the value of contrast enemas before deciding with any degree of certainty upon the nonexistence of carcinoma of the rectum or a possible polyp in patients with any of these three features in the history.

At least 3 per cent of all people have polyps in their rectum or colon, the discovery of which makes evident the presence of a lesion that is known to degenerate malignant in a high percentage of cases, and raises the question of removal.

On the basis of an extensive experience with cancer of the colon and rectum, Doctor Lahey states that his clinic feels very strongly that one of the possible ways of improving end results in cancer of the colon and rectum is through the early discovery of polyps. In weighing the evidence which suggests the relationship between polyps and malignant disease of the colon, attention is called to the relationship of the pathological findings in which most carcinomas of the colon and of the rectum are shown to be either malignant adenomas or adenocarcinomas. Practically all cancers of the colon and rectum look alike. They have excavated centers, and raised and spreading peripheral edges, and give a definite impression of a central point of origin with excavating peripheral spread. The close relationship also between the incidence of polyps and the incidence of carcinoma in the same segment between the splenic flexure and the anus is also extremely suggestive. In addition, if one will investigate the histories of a number of patients with carcinoma of the colon and rectum, there will be many in whom passage of bright blood has preceded the presence of an operable cancer of the colon and rectum for one or two years.

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It is presumable in such instances that the original passage of blood was from a polyp which later became malignant, since otherwise the lesion could not have remained operable over such a long period of time as was evident by the presence of blood in the stools.

In order to obtain good contrast enemas by means of which polyps and early carcinomas can be demonstrated, it is essential that the colon be thoroughly cleansed. This means that the patients must receive 2 ounces of castor oil the night before and at least one cleansing enema immediately before the contrast enema is given. If this is not done there will be cases in which solid pieces of feces may be mistaken for polyps and inadequate visualization of the outline of the entire colon will occur.

Because polyps of the colon are often a little vague in outline, it is necessary to mark the polyp on the roentgenogram with an arrow, send the patient home for at least a week or two and have him return and repeat the procedure to demonstrate the presence of a polyp again in the same position. If there is any doubt, the patient should be sent home for another week and return again for demonstration of the presence of a polyp in the same position. By such a procedure one can be quite sure of the presence and location of a polyp and avoid the very distressing situation of searching for one and being unable to demonstrate it.

It is also of extreme importance that castor oil be administered the day before and good cleansing enemas given immediately before the protoscopic examination. It is impossible to effect adequate surgical removal of polyps through a sigmoidoscope or proctoscope except in the presence of a clean field.

If it be accepted for practical purposes that all carcinomas of the rectum and colon start at one point in the circumference of the large bowel, it is possible, as the lesion is visualized in the roentgenogram, to make a rough guess as to the length of time it has existed. While this guess is only approximate, it nevertheless does give some idea as to the possibility of there being distant metastases and likelihood of recurrence.

When a carcinoma of the colon or rectum has become annular it can be assumed, allowing for variation in growth rate, that it took from six months to a year to have surrounded completely the lumen of the colon or rectum; and when in addition to becoming completely annular it has extended along the tube of the bowel to such an extent that a definite canal can be seen in the roentgenogram, it can be assumed that another six months has been required for that extra extent of growth.

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It can, therefore, roughly be prophesied that any annular lesion of the colon or rectum is a minimum of six months old and that any annular lesion which has become canalized is in all probability of from nine months to a year old.

It must obviously be assumed when lesions are six months to a year or more old that in a very large number of cases they will prove inoperable. This, however, should not deter one from exploring such cases since these lesions, although annular in character or even annular with canalization, are frequently removable.

As everyone who has dealt with cancers in any considerable number knows, small lesions often metastasize early with metastases far outstripping the size of the original lesion, and occasionally very large lesions remain local and metastasize late.

One should have in mind that patients with a carcinoma of the right colon may appear completely inoperable in terms of cachexia and anemic pallor of a lemon yellowish tint, and still be favorably operable. With such a degree of cachexia present with a lesion of the left colon, such cases in most instances would prove definitely inoperable. No one has ever adequately explained why carcinoma of the ascending colon, while still in a favorable stage of operability, can produce such high grades of secondary anemia and the appearance of inoperability. (The Lahey Clinic Bulletin, Oct. '45 - Frank H. Lahey)

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Cranial Trauma and Brain Movement: By the use of Lucite calvaria fastened to the skulls of Macaque monkeys, the Naval Medical Research Institute has been able to observe and record the effects of cranial trauma upon the underlying brain.

A series of studies was conducted by Sheldon, Pudenz and Restarski. Using specially constructed apparatus for delivering non-penetrating blows of predetermined force and 1/8 inch steel spheres fired from a gun, photographs of the brain were made with a high-speed camera at rates of from 2,000 to 3,000 exposures a second. Analysis of the results obtained throw new light upon the long-debated mechanism involved in focal and contrecoup brain injuries.

Previous theories have variously attributed brain damage to: vibrations transmitted to the brain from the skull; passage of waves of force through the brain; displacement at the pole opposite the impact; deformation of the skull; pressure gradients set up within the brain; and rotation of the cerebral mass

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within the skull. The last theory, expounded by Holbourn in 1943, is largely supported by the direct observations achieved in this experiment.

In repeated tests, blows of subconcussive strength were delivered to the frontal, temporal, parietal and occipital regions of both rigidly-fixed and freely-movable heads. In addition, the steel spheres of 1/8 inch diameter were fired through the bitemporal plane as perforating missiles.

The patterns of brain movement as recorded photographically were then analyzed by means of animated drawings and by projection of the films at a speed which prolonged the movements from 125 to 185 times.

The results demonstrated that the subconcussive blows delivered to the skull gave rise to gliding movements of the brain within the cranial cavity, the brain lagging behind the motion of the skull because of the inertia of the cerebral mass.

It was further shown that the movement of the brain was affected considerably by the mobility or immobility of the head, at the time of application of the impact, and that the degree of convolutional glide was greatest in the parietal and occipital lobes, irrespective of the site of the blow. Rotatory movements of the cerebral convolutions were observed to be chiefly in the sagittal or horizontal planes, the falk cerebri apparently preventing movement through a coronal arc.

All brain movements exhibited diminishing oscillations ending in the resting state. These settling movements were particularly marked in the parietal lobes, being a natural function of the greater mobility of this area of the brain.

In two cases when parietal blows were applied, the parietal veins entering the longitudinal sinus were torn, leading to the development of subdural ("sub-lucite") hematomas.

The removal of 2 c.c. of spinal fluid by lumbar puncture resulted in a considerable increase in the amplitude of brain rotation, demonstrating the role of cerebrospinal fluid as a buffer against such movement.

The results of firing 1/8 inch steel spheres through the fronto-temporal region of the skull at velocities of 1100 and 1800 ft. per sec. showed a greater destructive effect from the greater expansion wave produced by passage of the higher velocity missile, the greater expansion wave being shown also by spinal fluid pressure recording and the degree of flattening of the brain against the

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inner surfaces of the lucite plate and the skull. (N.M.R.I., Research Project X-182, Report No. 2)

Note: Request for copy of full report may be addressed to The Bureau of Medicine and Surgery, Attention: Research Division.

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Incidence of Cases of Smallpox: Recent outbreaks of smallpox in the United States and the appearance of several cases in the Armed Services again focus attention upon the need for unceasing vigilance in the program of protection against this disease.

In various areas of the world where large population groups are vaccinated en masse against smallpox and where the limits of expediency do not permit post-vaccination observation of the type of reaction produced, it is often considered necessary to introduce the vaccine lymph through scarification of multiple adjacent areas of the skin, usually in the region of the deltoid insertion. These scarified areas, often from 4-9 in number, are usually made in rows, two to three inches long. When vaccination is so performed and vaccine lymph of tested and known potency is used, aside from whatever else might be said or thought about such a procedure, there seldom arises any question that the individual might possibly not be vaccinated successfully on that occasion.

The Services, and physicians generally in the U. S., since the above method has not been necessary or considered desirable, have leaned toward the method using multiple pressures of a sterile needle through vaccine lymph confined to a small area of the skin. This technic adopted for the purpose of preventing what are believed unnecessarily large and deep areas of reaction with coincidentally greater potentialities for complications, leaves the determination of the certainty of vaccination to subsequent observation of what constitutes a negative or a satisfactory response.

In areas of the world where smallpox is highly endemic (high endemicity being in itself evidence that more is to be desired in the way of Public Health practice in those areas) the exposure rate for all personnel is high, and the acquisition of smallpox becomes almost a certainty by the nonimmune, highly probable by the partially immune, and possible by the individual who has reason to possess full immunity.

The chance that smallpox will develop in an exposed person is determined by the product of three factors, namely, (1) the degree of exposure (quantity of infective material gaining access to the tissues of the exposed individual), (2) the degree of virulence of the infecting virus and (3) the degree of immunity possessed by the exposed individual.

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The state of immunity of the individual will depend upon the product of five factors, namely, (1) previous natural exposures to smallpox with resulting subclinical infection producing protective mechanisms; (2) previous natural exposures to cowpox with a resultant infection and the production of protective mechanisms; (3) successful vaccination with suitable vaccine lymph, recently; (4) successful vaccination with suitable vaccine lymph, not recently; and (5) successful vaccination with suitable vaccine lymph, never.

What is known of the infectivity and immune responses associated with virus diseases in general and with smallpox in particular, coupled with the past experiences of the U. S. Navy in various parts of the world where varying degrees of smallpox endemicity have been present, furnishes adequate support to the soundness of the method of vaccination as officially recommended.

The occurrence of smallpox in any person (previously vaccinated or not) is *prima facie* evidence that adequate immunity was not possessed by that person. The occurrence of smallpox among individuals presumably immune suggests the possibility that a deficiency of immunity to smallpox may also exist in others concerned and makes mandatory the immediate revaccination of all hands.

The protection of personnel may be accomplished by sufficiently frequent successful vaccination with a suitable strain of viable cowpox virus. Unless repeated until successful, a negative reaction leaves the individual with whatever degree of vulnerability to smallpox he already possessed. The avoidance of unnecessary exposure when practicable is also desirable.

The physician has resting upon him the inescapable duty of knowing beyond any possible doubt that a satisfactory vaccination response is obtained in the case of every individual for whose protection he is responsible. He then knows that the best available protective mechanisms have been afforded all concerned and he can with positive assurance satisfy any possible implication that any particular case of smallpox resulted from a lack of proper vaccination.

Note: The Manual of the Medical Department (35B6.3) directs revaccination whenever exposure to smallpox occurs and at any time if doubt arises as to protection afforded by previous vaccination. The Manual of the Medical Department (35B7, 35B8 and 35B9) also outlines procedures of vaccination technic, preservation of the cowpox virus, and the grading and recording of the types of reactions observed.

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Possible Harmful Effects of Penicillin During Papular Stage of Smallpox:

Recent reports on the results obtained from the use of penicillin in the treatment of smallpox indicate that when penicillin is started during the pustular stage, skin infection and resultant scarring are completely controlled or greatly diminished, and from then on complete recovery is more rapid. However, the results from starting penicillin in the papular stage so far strongly suggest a harmful effect in that among those so treated, the death rate has far exceeded the prevailing death rates among patients in whom no penicillin was used. A suppressive effect upon the development of the pustular stage was exerted by penicillin when started in the papular stage and the earlier penicillin was given in the papular stage, the more often and the more complete did suppression of the pustular stage occur.

In order to determine more specifically upon the point in question, any information leading to a better understanding of the problem, if forwarded to the Research Division of BuMed, will be useful.

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Decreased Effectiveness of Penicillin: At the present time four fractions of penicillin are recognized and are designated as G, F, X and K. They are now identified by their fractionation index only. The biochemical properties of each are only partially understood. More satisfactory chemical methods of separation, identification and assay are being developed.

Most commercial penicillin now on hand and at present available contains a significantly large percentage of penicillin K, the fraction considered to possess the least antibiotic activity. Some of the reported indifferent therapeutic results recently obtained in the use of standard doses of penicillin may be due to: (1) an increase in fraction K which seems to be rapidly inactivated in the body and (2) a decrease in fraction G which is considered to be the more desirable. Other possible causes of any diminished efficacy and requiring further consideration are (1) an increasing resistance of organisms to penicillin and (2) the possibility that potent unknown fractions are being lost in the purification process.

Producing companies have already undertaken improvement in the effectiveness of penicillin by increasing the content of fraction G. Some time will be required before this is accomplished and the newer products made available.

Since it is considered that each product now available contains no more than 50 per cent of penicillin K, it has been suggested that the dose may need to be as much as doubled in order to administer a larger amount of fraction G, with a view toward effecting the desired therapeutic response.

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The decision as to dosage in each individual case should be based on clinical experience. In some cases, such as those in which the medical officer has been obtaining highly satisfactory results, employing usual doses of a particular stock of penicillin, no increase may be indicated, while in others more than double the customary quantity may be considered necessary. (Research Div., BuMed)

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A Report on Rodenticidal Experience Using Sodium Fluoroacetate (1080): Sodium fluoroacetate (1080) was used experimentally in buildings which were being, or had been, ratproofed. The operations were conducted largely in food establishments.

All baits consisted of water poisoned by 1/2 oz. of 1080 per gal. and to this was often added a dye, generally methylene blue. No pre-baiting was done, but efforts were made to cut off the natural water supply. Trapping, usually coincident with the poisoning, was also conducted.

The following rodents were controlled by 1080: Rattus rattus, R. norvegicus, and to some extent mice. The initial infestation was estimated at from 20 to 50 rats per establishment. During the experiments, 8.9 rats were recovered per building as compared with 3.9 rats recovered on similar programs utilizing other poisons for much longer periods. Results from 1080 far exceeded those from trapping: 6.4 rats were recovered per 10 containers of 1080 as compared with 1080-water containers, and in 62 per cent of the establishments no dead-rat odors were subsequently reported. It is believed that a few rats died in inaccessible places within the building, although dead rats and mice were recovered in 90 per cent of the places treated. A few sick rats were captured alive, the majority of which recovered with no apparent after-effects.

A small number of dead cats and dogs was found incident to the use of 1080. Numbers of roaches were also killed with 1080-water.

Based upon the number of rodents found dead, the degree of control obtained, the acceptability and the speed of action, it is concluded that 1080 is superior to red squill, barium carbonate, thallium sulfate, arsenic trioxide and ANTU. (N.R.C. Abstract Bulletin #29, Series A, of the Insect Control Committee Coordination Center from U.S.P.H.S., Typhus Control Section, Eng. Div. - J. S. Wiley)

(Not Restricted)

A Summary of Field Reports on 1080: This summary covers field reports on 1080 up to December 15, 1945. Reports from the Fish and Wildlife Service, U. S. Public Health Service, Army, Navy, Texas State Department of Public Health, U. S. A. Typhus Commission and various members of the British Commonwealth are included.

The consensus expressed in these reports is that 1080 represents a major advance in the progress toward an all-purpose rodenticide. Its outstanding features appear to be high toxicity to all species of rodents tested, excellent acceptance, relatively quick action, absence of objectionable taste and odor, chemical stability, nonvolatility, nontoxicity on the skin and nonirritation to the skin of workers. In addition, rats apparently do not develop any significant tolerance to 1080 on ingestion of sublethal amounts nor are they able to detect the poison except after the ingestion of lethal amounts. Although they may, during a poisoning operation, tend to develop an avoidance of the 1080 bait, this situation may be solved simply by changing the baits. The avoidance, in other words, is avoidance of a particular bait rather than an avoidance of 1080 per se. Although the cost of 1080 is \$4.00 to \$8.00 per lb., the poison is so potent a rodenticide that its cost constitutes a minor part of the expense of control operations. This compound is easily manufactured and starting materials for its synthesis are abundant in this country.

Disadvantages inherent in 1080 include its high solubility in water which may result in the poison being washed out of poisoned baits by rain. The rapidity of absorption of 1080 by the gastro-intestinal tract may, in the case of some field rodents, cause symptoms which warn the animal before it has ingested a lethal dose. This rapidity of absorption likewise is a disadvantage in the treatment of accidental poisoning in man and other animals. A major drawback to the use of 1080 is the extreme susceptibility of dogs and cats. The LD50 for dogs and cats is around from 0.1 mg./kg. to 0.5 mg./kg. while for rats it is from 1 to 7 mg./kg. A half-ounce bait, using 1080 in the ratio of 1:456 contains approximately 31 mg. of 1080. It is obvious that a small fraction of this bait is sufficient to kill a large dog. A number of dogs have been killed during rodent-control operations by eating bait in which 1080 was included. Sodium fluoroacetate exhibits a pronounced chemical stability within the body. The hazard of secondary poisoning of dogs and cats through eating dead rodents poisoned with sodium fluoroacetate containing baits must be borne in mind. The hazard of accidental poisoning of humans is heightened since 1080 is a white powder without odor and with only a slight salty taste. It could easily be mistaken for flour or baking powder and accidental contamination of food therefore easily overlooked. In connection with the danger of accidental poisoning, the lack of any specific therapy must be emphasized. Treatment of poisoning is entirely symptomatic and it has proved impossible to save an animal poisoned by 1080 once ventricular fibrillation has set in.

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An additional difficulty in the field use of the dry powdered 1080 is the hygroscopic tendency noted in two reports. This, under some climatic conditions, may hamper accurate weighing and the uniform dusting of bait with 1080.

Although 1080 is a potent poison with the disadvantages stressed above, it is no more toxic than many other poisons which are widely used and may actually be safer for field use. The accompanying table illustrates this point.

TABLE 1THE COMPARATIVE TOXICITIES TO MAN OF SEVEN RODENTICIDES

Poison	Poison conc. in bait	Estimated LD50 in mg./kg.	LD50 for 70 kg. man (mg.)	Poison in bait mg./oz.	LD in terms of bait used in field
1080	1:1600	5*	350	17.7	19.8 oz.
	1:454	5	350	62.4	5.6 oz.
	1:268 (water)	5	350	105.1	3.3 oz.
Tl ₂ SO ₄	1:65	20	1,400	436.5	3.2 oz.
Zn ₃ P ₂	1:50	40	2,800	567.0	4.94 oz.
BaCO ₃	1:5	800	56,000	5,670	9.9 oz.
Arsenic	1:33	1.5-15	105-1050	860	0.12-1.22 oz.
Strychnine	1:320	1	70	88.5	
ANTU	1:20	4000**	280,000	1,425	197 oz.

* On the basis of an LD50 for monkeys of ca. 5 mg./kg.

** On the basis of data from monkeys, supplied by Dr. Curt P. Richter. This extrapolation to man must be taken as a very tentative estimation due to the peculiar physiologic action of ANTU. The correct LD50 figure for man may be much lower.

It has been tentatively concluded that 1080 is a useful poison to be used in rat and mouse control in business districts but not in residential areas. It may largely replace all other rodent poisons in areas other than residential districts.

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Rodenticides used in residential districts should continue to include only red squill and zinc phosphide since hazard to pets and humans is least with these materials. It is also tentatively concluded that 1080 is an effective and economical poison for the control of field rodents and may replace the extensive use of other poisons in this regard. 1080 should be used only by trained personnel with careful attention to the dangers involved. In no circumstance should the pure 1080 be made available for general use by the public. (N.R.C., Insect Control Committee Report #163 - Richard A. Ormsbee)

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The Estimation of Streptomycin in Body Fluids: Increasing interest in streptomycin as a chemotherapeutic agent has made apparent the need for a simple method for estimating the concentration of this drug in body fluids.

A survey of the authors' bacterial stock cultures demonstrated that several organisms were sensitive to streptomycin when examined by the serial dilution method, employing a modified medium consisting of peptone 1 per cent, beef extract 0.5 per cent, and sodium chloride 0.25 per cent adjusted to pH 7.8-8.0 with NaOH. Further investigations revealed that one of these, Bacillus circulans, was the most sensitive and gave accurate, reproducible results with various body fluids. Consequently, it was chosen as the test organism.

B. circulans is a mesophilic, motile, aerobic spore-bearing micro-organism. It grows well at temperatures between 30° and 37° C., forming floccules which make the end point in the serial dilution test relatively easy to determine. It is sensitive to 0.15 microgram/ml. of streptomycin base. Broth cultures are quite stable and may be preserved in screw-cap bottles under refrigeration for periods of one month with no appreciable loss in sensitivity.

Technic of the test: Amounts (0.5 ml.) of the modified nutrient broth are placed in sterile Wassermann tubes and serial dilutions by halves made by adding 0.5 ml. of the fluid being tested to one of the tubes and carrying 0.5 ml. by serial dilution for the desired number of tubes. The first tube in the series contains 0.5 ml. of the solution under test only. A standard is prepared for comparison by diluting a streptomycin salt of known potency in broth to contain 10 micrograms of the base per milliliter. This standard is serially diluted in the same manner as the body fluid under test. One and one-half milliliter of a 1:100 dilution of the test organism in broth is then added to all tubes, after which they are incubated overnight. The last tube in which no growth occurs is considered the end point.

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The concentration of streptomycin in the unknown is then determined by comparing the end point with that of the standard. An example is given in Table 1, in which it will be noted that the standard completely inhibited growth of B. circulans in the fifth tube.

Table 1

Fluid	Tube Nos.						
	1	2	3	4	5	6	7
Standard	0	0	0	0	0	+	+
Serum.....	0	0	0	+	+	+	+
Urine 1:50.....	0	0	0	0	+	+	+

Since this represents 10 micrograms, the serum tested contains one-fourth as much, or 2.5 micrograms; the urine which caused complete inhibition in the fourth tube contained 5 micrograms \times 50 or 250 micrograms/ml. To determine lower potencies it is necessary to vary the dilution series of standard and unknown.

In a similar method, employing Bacillus subtilis for determining penicillin in body fluids, it was found that unexplained inhibitory substances often interfered, necessitating a control series for proper evaluation. To determine whether there were present similar factors inhibitory to B. circulans, the sera from approximately a hundred individuals were tested. Only one of this number possessed inhibitory properties in a serum dilution of 1:4 for B. circulans. In a second series, the sera of 40 individuals being treated with oral penicillin were also examined for inhibitory substances against this organism. Three of these showed inhibition in serum dilutions of 1:4. The greater majority of these persons had received penicillin many times in the past. The possibility that penicillin in some cases may actually induce formation of these inhibitory substances is worthy of consideration. In no instance was the penicillin concentration itself sufficiently high to act as an inhibitor of the test organism. Inasmuch as the effect of these inhibitory substances on the validity of results obtained by this serial dilution method for determining streptomycin is practically negligible, the use of a control series on each serum does not appear necessary. (Science, Jan. 11, '46 - Price, Nielsen and Welch)

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(Not Restricted)

Studies on Problems in Protection Against X-rays: The summaries and conclusions of studies made by Birnkrant and Henshaw and published in Radiology of June 1945 follow below.

I. Radiation Hazards in Photofluorography: (1) Scattered radiation measured near the skin surface was found to be 18 times greater with 35 mm. photofluorographic technic than with 14 by 17 inch film technic. (2) The subject under examination was found to be the chief source of scattered radiation. (3) Enough stray radiation escaped in the photofluorographic room during an average working day to give a cumulative dose at several positions where careless operators might stand, which was well in excess of the accepted permissible dose of 0.1 roentgen daily. (4) An extension cone attached to the X-ray tube reduced stray radiation. The increase of scattered radiation without the extension was from 27 to 48 per cent in certain locations. (5) The position behind lead screens was found to be the safest place in the room.

II. Irradiation Injury and the Tolerance Dose: The problem of radiation protection has been reviewed. It has been recognized (1) that various effects, such as skin ulceration, sterility, anemia and even death may result from exposure to ionizing radiation in amounts not greatly exceeding those which accumulate in comparatively short periods of time in various laboratories, shops and clinics; (2) that for such effects there are threshold levels of exposure; (3) that other changes, such as premature aging and neoplasia, may appear long after exposure; (4) that for still other effects, irradiation-induced mutations, there appears to be no threshold level of exposure; (5) that there is roughly a factor of 100 difference between the accepted permissible dose of 0.1 roentgen per day and the cosmic and earth radiation to which everyone is continuously exposed; (6) that slight changes in the blood picture can be found in apparently normal persons exposed occupationally to small amounts of radiation.

The feeling is expressed that in the absence of more complete information, every effort should be made to prevent exposure intensities exceeding the present accepted permissible level of 0.1 roentgen per day and that an open mind should be maintained toward the necessity of lowering the present level if this is indicated by future developments.

III. Protective Measures in Photofluorography: The Tuberculosis Control Division of the U. S. Public Health Service has developed a program of personnel protection in photofluorographic units. In the main, this program consists of (1) provision of adequate protective equipment, (2) taking account of the human factor of indifference, (3) detection of stray radiation reaching each worker and (4) watching for evidence of radiation injury in each worker. The protective equipment consists mainly of lead screens so located as to shield workers from the radiation coming from the X-ray tube and the patient. The human factors are handled in part by locating foot and hand switches behind the screens in such a manner as to require the workers to be in proper location

(Not Restricted)

when exposures are made. Stray radiation is detected by means of dental films worn by each worker for a specified period each month. Evidence of injury is sought through routine monthly blood counts.

(Not Restricted)

Effect of Water Purification on Removal of DDT: Experiments on the ability of water purification methods to remove DDT from a water supply were made by the U. S. Army Fourth Service Command Laboratory in cooperation with the City of Atlanta, Georgia. The xanthydroly-KOH-pyridine method was used to determine the DDT content of treated water during the later stages of the work. This method permits the determination of as little as 0.05 p.p.m.

These studies showed that the standard methods of water purification, including coagulation, activated carbon and filtration, will remove practically all DDT from water. Either alum or the iron salts are effective coagulants, although the latter appear slightly more effective. Activated carbon should be added after the floc is removed in order to be most effective. A contact period of thirty minutes is sufficient if the carbon has been thoroughly mixed with the water, and, except with high content of DDT, a dosage of 2 p.p.m. of activated carbon appears to be sufficient. The small residual portions of DDT remaining after coagulation and filtration can be removed by storage for four or five days, or by filtration through cation and anion zeolites. (Bull. U. S. Army M. Dept., Jan. '46)

(Not Restricted)

Abstracts of Reports on Research Projects (Full reports are available upon request):

X-176 The Inactivation of Eastern and Western Strains of Equine Encephalitis Virus by Mechanical Agitation.

Eastern and Western strains of equine encephalitis are rapidly inactivated in acidic saline suspensions when such suspensions are agitated by bubbling various gases through them or by mechanical shaking.

The H ion concentration of the virus suspension is the basic factor which influences the degree of susceptibility of the virus to bubbling or shaking. The critical concentration appears to be pH 6.8. Above this, the virus is quite resistant, while at lower H ion concentrations it is readily susceptible to agitation. (N.M.R.I., N.N.M.C., Bethesda, Md.)

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(Not Restricted)

Joint Operations Review Board: In order to analyze joint operations of World War II and bring up to date the doctrines applicable to such joint operations, a Joint Operations Review Board has been set up and is now in session at the National War College (formerly designated as the Army and Navy Staff College).

It is intended that the results of this analysis will take the form of a manual which will serve:

- a. As a guide to commanders of joint operations and their staffs;
- b. As a text for the use of the several schools of the respective Services the curricula of which embrace subjects relating to joint operations; and
- c. As a basis for manuals of instructions to be issued by the several Services on a unilateral basis.

Because of the recognized necessity of having Medical Department plans formulated with a full knowledge of the over-all plan if Medical Department participation is to be properly integrated with the over-all plan, it has been deemed essential to have Medical Department representation at the highest levels. To this end, the Surgeon General of the Navy has been requested to furnish a medical officer to serve for the Navy Medical Department with the Joint Operations Review Board. Captain G. B. Dowling (MC), USN, assigned to the Research Division of the Bureau of Medicine and Surgery, is now performing this duty.

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(Not Restricted)

Eastern Association of Electro-encephalographers: Twenty-seven civilian and military electro-encephalographers from several different states met at the Graduate Club of the Institute of Living at Hartford, Connecticut, on 1 March to organize the Eastern Association of Electro-encephalographers. Formed for the purpose of promoting research in the field, the association plans to pool scientific information concerning the neurophysiology and clinical application of electroencephalography.

Lt. Comdr. Robert Schwab (MC), USN, of the U. S. Naval Hospital in Boston, was elected chairman of the Association. (Science, March 29, '46)

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(Not Restricted)

American College of Physicians Postgraduate Courses: For the purpose of assisting in bringing potentially useful information to medical officers who have been or soon will be released from active duty the following announcement is made:

The American College of Physicians will again sponsor a series of intensive, advanced short postgraduate courses which will be held at various medical schools and university-teaching hospitals throughout the United States in the Spring of 1946 and again in the autumn.

Although the courses are organized especially for Fellows and Associates of the College, nonmembers with adequate preliminary training may apply for enrollment, with the order of acceptance for available openings to nonmembers as follows: (1) candidates for membership; (2) medical officers in the Armed Forces; (3) physicians preparing for examinations by their certifying boards; (4) other nonmembers having adequate background for advanced work.

Courses cover the following subjects: Clinical Allergy, General Medicine, Internal Medicine, Metabolism and Nutrition, Gastro-Enterology, Cardiology and Chest Diseases.

Fees depend upon type of course and membership status with the exception that no fee will be charged for medical officers of the Armed Forces of the U. S. and Canada on Active Duty or Terminal Leave.

Detailed bulletins of courses and registration forms are available through Dr. C. C. Shaw, Educational Director, American College of Physicians, 4200 Pine Street, Philadelphia, Pa.

It not being possible for the Navy to order reserve officers to these courses while on active duty or otherwise defray any expense incident to such training, it is necessary that those officers who may wish to enroll write directly to Doctor Shaw.

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(Not Restricted)

Periodical of Plastic and Reconstructive Surgery: The American Society of Plastic and Reconstructive Surgery announces the publication of an official periodical to be known as Plastic and Reconstructive Surgery. The first number will appear in July, and the journal will be issued bimonthly. One volume of 500 pages will be issued each year, and the subscription price will be \$6.00. Dr. Warren B. Davis, of Philadelphia, the editor, will have the assistance of a

(Not Restricted)

board of 12 associate editors. Subscriptions should be sent to the publishers, The Williams and Wilkins Company, Baltimore 2, Maryland. (Science, March 29, '46)

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(Not Restricted)

Key to the Culicine Mosquitoes of China: This publication by Richard M. Bohart, is listed as NAVMED 961. Those interested may request a copy through a letter addressed to the Bureau of Medicine and Surgery, Attention: Preventive Medicine Division.

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(Not Restricted)

Public Health Foreign Reports:

<u>Disease</u>	<u>Place</u>	<u>Date</u>	<u>Number of Cases</u>
Plague	Boliva, Santa Cruz Dept., Vallegrande Province	Feb. 2-9, '46	12 (4 fatal)
	India, Calcutta	Jan. 26-Feb. 2, '46	1 fatal
	Madagascar	Jan. 1-20, '46	27
	Portugal, Azores	Dec. 29-Jan. 5, '46	3
Smallpox	Bolivia	December '45	147 (24 fatal)
	Canada, Saskatchewan Province	Jan. 26-Feb. 2, '46	2
	Gold Coast	Jan. 26-Feb. 2, '46	112 (21 fatal)
	Morocco (French)	Jan. 1-Feb. 10, '46	500
	Sudan (French)	Jan. 1-31, '46	786
Typhus Fever	Belgian Congo	Jan. 5-Feb. 2, '46	473 (39 fatal)
	Bolivia	December '45	53 (18 fatal)
	Chile	Dec. 1-29, '45	51
	Columbia Dept. of Cundinamarca-Bogota	December '45	74 (3 fatal)
	Ecuador	January '46	106 (2 fatal)
	Egypt	Jan. 5-19, '46	145
	Morocco (French)	Jan. 1-Feb. 10, '46	496
	Turkey	Jan. 19-Feb. 16, '46	155
Yellow Fever	French Equatorial Africa - Chad Territory		
	Logone Dept.-Moundou	Feb. 10, '46	1 suspected (fatal)
	Venezuela	Jan. 26-Feb. 9, '46	6 (3 confirmed)

(Pub. Health Foreign Reports, March 1, 8 and 15, '46)

Circular Letter 46-54

13 March 1946

(Not Restricted)

To: MedOfComs, NavHospitals (Continental).

Subj: Streptomycin, Report of Use of.

1. For a limited period of time, one copy of NavMed-982 will accompany each issue of streptomycin from NMSD Brooklyn.

2. It is requested that this copy be completed for each case in which streptomycin is used, and forwarded to BuMed (Professional Division).

--BuMed. Ross T. McIntire.

to sale, nonresistant to streptomycin
because can't
be used (instructions to H * * * * * * *
-Disease news to be by you

Circular Letter 46-55

26 March 1946

(Not Restricted)

To: Comdrs, Nineteenth and Sixteenth Fleets.

Subj: Inactive Fleets, Preservation of Records and Submission of Reports.

Refs: (a) Hdqrs 19th Fleet ltr, Serial 940.

(b) Manual of the Medical Department, 1945, Part V, Chapter I.

1. As recommended in ref (a), Medical Department reports (ref b) and records shall be the responsibility of the Group Commander (Group Medical Officer) and shall be forwarded via the cognizant fleet headquarters.

2. These reports will represent the Group Command and not individual units of the group.

--BuMed. Ross T. McIntire.

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Circular Letter 46-56

(Not released in time for this issue).

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Circular Letter 46-57

26 March 1946

(Not Restricted)

To: MedOfCom, NavHospitals and NavSpHospitals.

Subj: Bactericidal Ultra-Violet Radiation Equipment, use of.

(Not Restricted)

1. Considerable general interest is evident in the employment of ultra-violet radiation as a bactericidal agent in hospitals, particularly in contagious wards, nurseries, operating rooms, and commissary department meat stowage spaces. It is reported that about 2,000 civilian U. S. hospitals are thus using ultra-violet equipment.
2. This Bureau is and has been conducting a series of studies to determine the efficacy of this agent in reducing the incidence of air-borne infection.
3. Information is desired as to the presence of any bactericidal ultra-violet radiation equipment (not therapeutic sun lamps) in your activity, its length of use, description of installation as regards to location, fixtures, and manufacturer, numbers and wattage of lamps employed and manufacturer, size of area and distance from deck or object irradiated. It is particularly desired that full comment be submitted as regards factual knowledge or even unsubstantiated belief in the efficacy of ultra-violet radiation in lessening air-borne infection or any other value believed derived from its use. Conversely, report is desired of any possible deleterious effect, such as eye pain, conjunctivitis, or exfoliation.
4. It is considered that the knowledge and opinions of those who may be experienced in the use of this agent will be of value to this Bureau. A negative report is desired in the absence of ultra-violet installation or experience.

--BuMed. Ross T. McIntire.

Circular Letter 46-58

27 March 1946

(Not Restricted)

To: DMO's ONE, THREE, FOUR, FIVE, SIX, SEVEN, EIGHT, NINE, ELEVEN, TWELVE, THIRTEEN, SEVERN RIVER COMMAND, POTOMAC RIVER COMMAND.

MedOfCom, NavHosp, and NavSpHosp (in above commands)

Subj: Hospital Patients; Transportation of Via the Naval Air Transport Service.

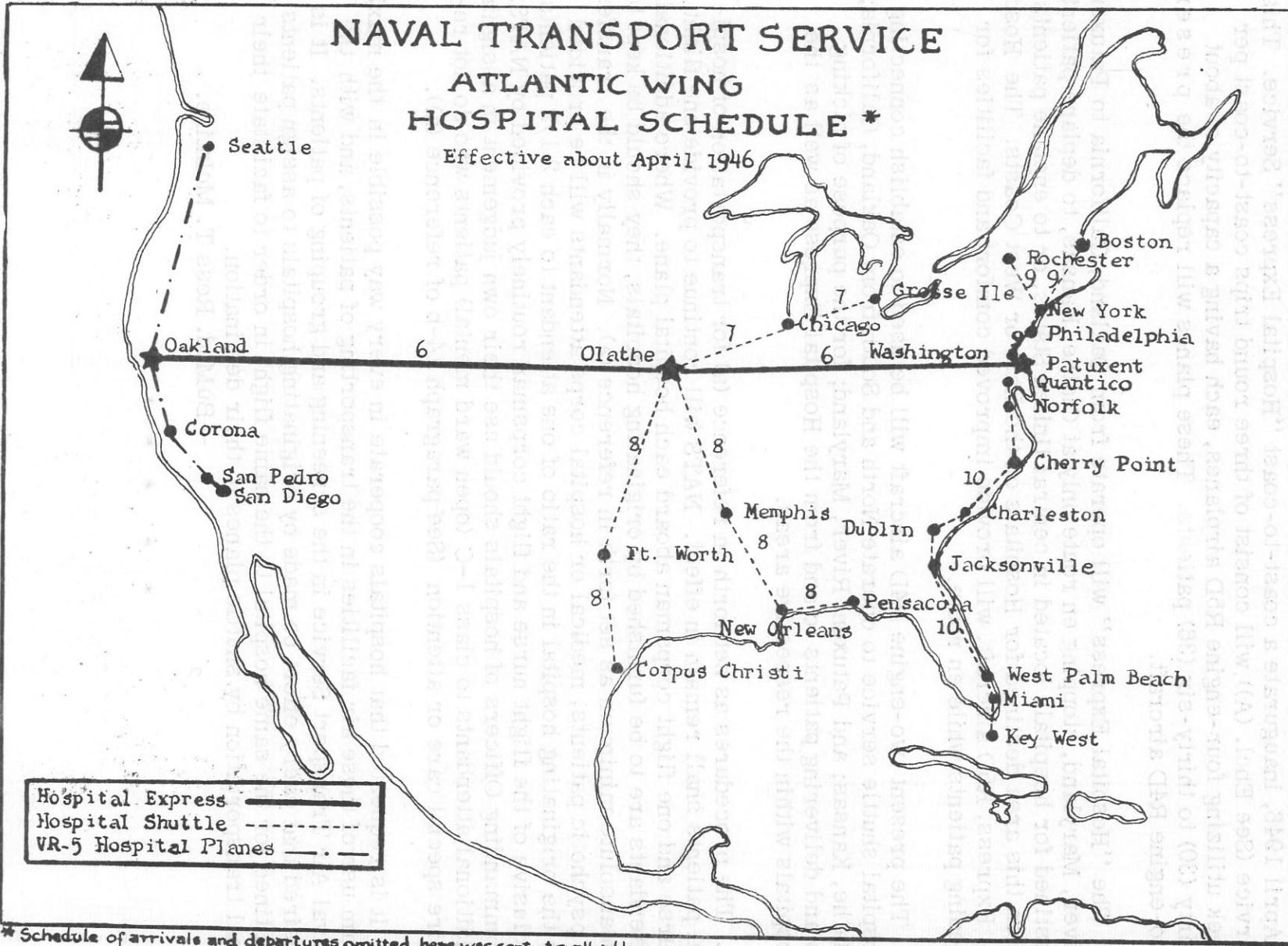
Ref: (a) NATS Atlantic Wing Memorandum No. 3-46 of 8 March 1946.

Encl: (A) Schedule of Hospital Flights within the continental United States.

1. In order to overcome operational difficulties and provide a means for more comfortable and expeditious transfer of patients by air within the continental limits of the United States the Naval Air Transport Service will, on or about

(Not Restricted)

Enclosure A



(Not Restricted)

1 April 1946, inaugurate a coast-to-coast "Hospital Express" Service. This service (See Encl. (A)) will consist of three round trips coast-to-coast per week utilizing four-engine R5D airplanes, each having a capacity of about thirty (30) to thirty-six (36) patients. These planes will replace the present two-engine R4D aircraft.

2. The "Hospital Express" will operate from Oakland, California to Patuxent River, Maryland, stopping en route only at Olathe, Kansas, to deplane patients destined for hospitals located in central United States, or to enplane patients from this area destined for Hospitals on the East or West Coasts. The Hospital Express, R5D aircraft, will provide improved comfort and facilities for feeding patients while en route.

3. The present two-engine R4D aircraft will be used to establish connecting hospital shuttle service to operate North and South from Oakland, California; Olathe, Kansas; and Patuxent River, Maryland; for the purpose of picking up and delivering patients to and from the Hospital Express as well as the hospitals within the respective areas.

4. The procedures as set forth in reference (a) for transportation of hospital patients shall remain in effect. NATS will continue to provide one flight nurse and one flight corpsman aboard each hospital plane. Where additional attendants are to be furnished by originating hospitals, they should be kept to an absolute minimum as set forth in reference (a). Normally in the transfer of psychotic patients, medical or hospital corps attendants will be provided by the originating hospital in the ratio of one attendant to each 2 1/2 patients inclusive of the flight nurse and flight corpsman routinely provided by NATS. Commanding Officers of hospitals should use their own judgement in assigning additional attendants to class 1-C (open ward mental) patients who do not require special care or attention (See paragraph 14-b of reference (a)).

5. It is requested that hospitals cooperate in every way possible in the maximum use of these air facilities in the transporting of patients, and with the Naval Air Transport Service in the screening and grouping of patients. It is desired that every effort be made by originating hospitals to assign patients destined for the same hospital to the same flight in order to facilitate their final transportation by shuttle planes to their destination.

--BuMed. Ross T. McIntire.

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Circular Letter 46-59

28 March 1946

(Not Restricted)

To: Fleet Medical Officers, Force Surgeons, Staff Medical Officers, and Area Commanders (Via: Commanders).
DMO's all Naval Districts and River Commands (Via: Comdnts.).
MedOfCom, All NavHosp's.

Subj: Transfer to Regular Navy, Reserve Medical Officers Requests for.

Ref: (a) BuMed Cir ltr 46-43, 19 Feb 1946.

1. The Bureau has made provisions for advance training of medical officers in preventive medicine.

2. Ref (a) is modified as follows:

Insert the words "preventive medicine" between "tropical medicine" and "military government".

--BuMed. Ross T. McIntire.

Note: Copy of reference (a) is reprinted on page 32 herein.

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Circular Letter 46-60

29 March 1946

(Not Restricted)

To: Commandants, Naval Districts and River Commands.

Subj: Reserves Released to Inactive Duty, Health Records of.

Ref: (a) BuMed Cir Ltr No. 46-44, 20 Feb 1946.

1. It is directed that the medical history sheets (NavMed Form H-8) containing entries and the dental records (NavMed Form H-4) of Navy and Marine Corps Reserves, who have been released from active duty, be removed from their health records on file at the various District Headquarters and forwarded to the Bureau of Medicine and Surgery. For identification purposes and to expedite filing, the individual's name, rate or rank, and service or file number shall be typewritten on each medical history sheet and dental record forwarded to the Bureau.

2. In those cases where the medical history sheets contain entries of serious illness or injuries which might be of interest to medical officers who may be called upon at some future date to determine the individual's physical fitness

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(Not Restricted)

for further active service, a brief resume of such entries shall be made on a medical history sheet and retained in the health record as a supplement to the abstract of medical history (NavMed Form H-5).

3. The purpose of this procedure is explained in paragraph three (3) of reference (a).

--BuMed. Ross T. McIntire.

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Circular Letter 46-61

30 March 1946

(Not Restricted)

To: All Naval Separation Centers and Marine Corps Separation Companies.

Subj: Copies of Medical Records Forwarded to Veterans Administration Area Offices.

Ref: (a) BuMed, BuPers, and MarCorps Joint Circular Letter, 44-218, October 30, 1944.
(b) BuMed Letter P3-5/P19-1 (034-42) dated December 4, 1945, addressed to All Naval Personnel Separation Centers.

1. According to information received from the Veterans Administration photostatic copies of medical records are being forwarded to Veterans Administration Area Offices by some of the activities addressed in cases where the individual being discharged from the service has stated that he does not desire to submit a claim for a pension.

2. Copies of medical records should be forwarded to the Veterans Administration in those cases only where the individual submits a pension claim and should accompany the claim to the Veterans Administration Area Office. Attention is invited to the instructions in references (a) and (b).

--BuMed. Ross T. McIntire.

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To: All Ships and Stations.

(Not Restricted)

Pers-5201-DF

P3-1, 5 March 1946

Subj: Prevention and Control of Venereal Disease.

1. During the period of the war the Navy cooperated with community agencies and citizens' groups throughout the country in the study of venereal diseases and methods of prevention and control. The Congress recognized the damaging influence to military personnel by enactment of the May Act. Today the movement toward education and prevention of these diseases is increasing in force.

2. It is no less important now that the war is over for military personnel and the general public to remain aware of the dangers of venereal diseases in peace-time society. I am fully in accord with the efforts being made by a large number of agencies to educate our citizens in the control and prevention of venereal diseases and it is my desire that wherever possible naval personnel continue to cooperate with social, religious, and welfare agencies in their efforts to further a broad social-hygiene program which supports high moral standards and promotes the prevention of venereal diseases.

3. Naval commands have already received special information concerning this program of cooperation with local agencies and commanding officers of such units are aware of efforts being made in those communities in which shore-patrol units are stationed. The naval commands will cooperate with local authorities.

4. With a view to further progress of the program to control venereal disease, it is directed that commanding officers determine that all naval personnel within their commands are fully indoctrinated in the methods of prevention of disease.

--OpNav. C. W. Nimitz.

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ALNAV 104

(Not Restricted)

BuMed.

2 March 1946

Subj: Transfer to Regular Navy, Nurse Corps.

1. Provisions of Alnav 283-45 are applicable to officers of the Nurse Corps.

2. Modification of age qualification for officers of the Nurse Corps, U.S. Naval Reserve, transferring to the Regular Nurse Corps, as promulgated in Alnav 279-45 are effective for such officers who request transfer within 6 months following the date of their release from active duty.

--SecNav. James Forrestal.

(Not Restricted)

Disestablishment of Naval Medical Activities. As published in the Navy Department Semimonthly Bulletin of 15 March 1946, the following Naval Medical activities were disestablished as of the dates shown:

U. S. NAVY V-12 MEDICAL UNITS

<u>Naval district</u>	<u>Location</u>	<u>Disestablishment Date</u>
First	Dartmouth College	2 March 1946
Fourth	Hahnemann Medical College	14 March 1946
Eighth	Louisiana State University	9 March 1946
Ninth	Marquette University	1 March 1946
Ninth	University of Michigan	9 March 1946
Ninth	University of Cincinnati	3 March 1946
Ninth	Western Reserve University	15 March 1946
Ninth	St. Louis University	16 March 1946
PRNC	George Washington University	9 March 1946
PRNC	Georgetown University	17 March 1946

U. S. NAVY V-12 DENTAL UNITS

<u>Naval district</u>	<u>Location</u>	<u>Disestablishment Date</u>
Ninth	St. Louis University	16 March 1946
PRNC	Georgetown University	17 March 1946

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Redesignation of U. S. Naval School (Hospital Corpsmen), Naval Hospital, San Diego 34, California.

To: All Ships and Stations.

Op24B1-pd
Serial 507P24

Subj: U. S. Naval School (Hospital Corpsmen), Naval Hospital, San Diego 34, California. - Redesignation of.

12 March 1946

Ref: (a) SecNav serial 156P24, of 11 Jan. 1946; N.D. Bul. of 15 Jan. 1946, 46-57.

1. The U. S. Naval School (Hospital Corpsmen), Naval Hospital, San Diego 34, California, redesignated by reference (a), is hereby further redesignated as follows:

(Not Restricted)

U. S. Naval Hospital Corps School,
Naval Hospital,
San Diego 34, California.

7439-852

2. Bureaus and offices concerned take necessary action.

--SecNav. James Forrestal.

* * *

Redesignation of U. S. Navy Dental Clinic, Medical Department, New York Naval Shipyard--and Inclusion as Component of U. S. Naval Base New York, N.Y.

To: All Ships and Stations.

Op24B-pd

Serial 579P24

Subj: U.S. Navy Dental Clinic, Medical Department, New York Naval Shipyard--Redesignation of and Inclusion as Component of U. S. Naval Base New York, N. Y.

1. The U. S. Navy Dental Clinic, Medical Department, New York Naval Shipyard, is hereby redesignated as a separate component of the U. S. Naval Base, New York, N. Y., under a Dental Officer in Command, as follows:

U. S. Navy Dental Clinic,
Park and Vanderbilt Avenues,
Brooklyn, New York.

2748-250

This is an activity of the Third Naval District under the technical control of the Bureau of Medicine and Surgery.

2. Bureaus and offices concerned take necessary action.

--SecNav. James Forrestal.

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Circular Letter 61-46

6 March 1946

(Not Restricted)

To: All Ships and Stations.

Subj: Advancement Examinations for Hospital Corps Ratings, Use of

Ref: (a) Advancement Examinations, book I, NavPers 16891.
(b) Handbook of the Hospital Corps, U. S. Navy.
(c) BuPers Manual, part D, ch. 5, sec. 2.

(Not Restricted)

1. Reference (a) contains examinations for advancement in rating for personnel in the following Hospital Corps rates: Hospital apprentice, first class; pharmacist's mate, third class; pharmacist's mate, second class; pharmacist's mate, first class; and chief pharmacist's mate.
2. Attention is invited to the fact that certain of the questions included in the examinations for Hospital Corps ratings in reference (a) cover subject matter which is not included in reference (b), the standard training manual for Hospital Corps personnel. Effective immediately it is hereby directed that examining boards having cognizance over the advancement of enlisted personnel in the Hospital Corps ratings discontinue the use of the examinations as published in reference (a) except as outlined in paragraph 3 below.
3. Future examinations used to advance Hospital Corps personnel are to be constructed by authorized local examining boards. Boards are directed to use sufficient questions to insure a comprehensive coverage of each of the required examination subjects as listed in reference (c). If, in constructing examinations, local boards select items from the examinations in reference (a), they are directed to confine the selection of questions to those for which the subject matter is presented in reference (b).

--BuPers. T. L. Sprague.

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(Not Restricted)

Circular Letter 46-43 (Reference (a) of Circular Letter 46-59)

To: Fleet Medical Officers, Force Surgeons, Staff Medical Officers, Area Commanders, (Via Commanders), DMO's All Naval Districts and River Commands, MedOfComs All Naval Hospitals.

Subj: Transfer to Regular Navy, Reserve Medical Officers Request for.

Ref: (a) ALNAV 46-88.
(b) BuPers Cir Ltr 288-45 (Rev. 15 Nov 1945).
(c) BuMed News Letter Vol. #6, No. 13, p. 16, dated 21 Dec 1945.
(d) Message from the Surgeon General regarding Navy Advantages.

Encl: 1. (HW) Copy of Ref (d).

1. A review of the applications of Reserve medical officers for transfer to the Medical Corps of the regular Navy indicates that additional applications will be necessary to fill the billets for medical officers in the peacetime Navy. Attention is invited to ref (a).

(Not Restricted)

2. It is the opinion of the Bureau that the opportunities for service in the Medical Corps of the regular Navy have not been brought to the attention of Reserve medical officers who might be interested in the regular Navy as a career.
3. It is suggested that all reserve medical officers under your cognizance be contacted personally or by such other means as may be practicable with a view of presenting to them the professional and other advantages of the regular service (refs (b), (c), and (d)). The newly adopted professional training program leading to certification by various specialty boards is presented in ref (c). In addition thereto the Bureau has made provision for advanced training of medical officers at naval activities and civilian medical centers in aviation medicine, medical aspects of deep diving and submarine service, industrial medicine, tropical medicine, military government, medical statistic and research.

Medical officers who do not desire the type of professional training referred to above will, upon their request, be considered for refresher courses of their choice in naval hospitals, or in large dispensaries (Obstetrics and Gynecology and Pediatrics).

4. It is directed that a report of progress in this regard be forwarded to the Bureau of Medicine and Surgery via air mail on the first of each month, until 1 Oct 1946.

--BuMed. Ross T. McIntire.

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